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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PATEL, VISHAL A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/524,917	Applicant(s) GIGGENBACHER ET AL.	
	Examiner Vishal Patel	Art Unit 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2 and 7-9 are rejected under 35 U.S.C. 102(b/e) as being anticipated by Takahashi (US. 20030102631).

Takahashi discloses divided mechanical face seal having a first (e.g. 27) and second (e.g. 4) cooperating seal rings, a divided driver device (e.g. having 40 and 30) configured for mounting to a rotary component and for the transmission of a torque from the rotary component to the first seal ring, which is adapted to be fastened to the driver device, the driver device being divided in at least a single radial plane for forming sections in the form of segments of a circle (e.g. both 30 and 40 are segmented into halves to form a circle), the sections being adapted to be clamped into the shape of a ring, and the driver device being axially sub-divided into a radially divided retaining ring (e.g. 30) for retaining the first seal ring (e.g. 27) and a radially divided mounting ring (e.g. 40) for mounting to the rotary component, the mounting ring and retaining ring being adapted to be coupled together for rotation in common, the retaining ring includes sections in the form of segments of a circle adapted to be placed together in a sealed manner into the shape of a ring having an inner radial dimension that is greater than the nominal outer radial dimension of

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the rotary component and further including peripherally aligned end faces abutting each other, and the mounting ring including at least a pair of sections in the form of segments of a circle, the sections being adapted to be combined into a ring having an inner radial dimension that is smaller than that of the retaining ring and smaller than the nominal outer radial dimension of the rotary component for clamping engagement of the mounting ring with the rotary component, wherein the retaining ring and the mounting ring are coupled together with play in at least the circumferential direction by at least one drive pin (e.g. pin 43) projecting axially from an axial end face of one of the mounting and retaining rings and engaging, in a loosely seated manner, in a recess (e.g. 48) defined in an adjacent end face of the other of the mounting and retaining rings, a seal housing (e.g. 7) divided in at least one radial plane into sections in the form of segments of a circle adapted to be clamped together and mutually sealed against each other, wherein the second seal ring (e.g. 4) is adapted to be fastened to the housing for cooperating with the first seal ring of the driver device. The sections of the seal housing include peripherally aligned end faces which are configured to be in essentially planar metal-to-metal contact, the end faces having a surface finish for sealing engagement to one another (this would be the case since the end faces have a surface finish). The seal ring is loosely seated on the retaining ring (this is the case due to the member 37).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita (JP 08054067A) in view of Copes (US. 3,025,070).

Kinoshita discloses a divided mechanical face seal having a first and second cooperating seal rings (e.g. portion of 15 that contacts 17 and 17), a divided driver device (e.g. 20 and 22) configured for mounting to a rotary component and for the transmission of a torque from the rotary component to the first seal ring (e.g. 17), which is adapted to be fastened to the divided driver device, the driver divided device being divided in at least a single radial plane for forming sections in the form of segments of a circle (e.g. figures 4-6), the sections being adapted to be clamped into the shape of a ring, and the divided driver device being axially sub-divided into a radially divided retaining ring (e.g. 20) for retaining the first seal ring (e.g. 17) and a radially divided mounting ring (e.g. 22) for mounting to the rotary component, the mounting ring and retaining ring being adapted to be coupled together for rotation in common (abstract), wherein the retaining ring includes sections in the form of segments of a circle (e.g. figure 5) adapted to be placed together in a sealed manner into the shape of a ring having an inner radial dimension (e.g. inner diameter of 20) that is greater than the nominal outer radial dimension of the rotary component (figures) and further including peripherally aligned end faces abutting each other (e.g. faces at 62), and the mounting ring including at least a pair of sections (figure 6) in the form of segments of a circle, the sections being adapted to be combined into a ring having an inner radial dimension that is smaller than that of the retaining ring (e.g. figures 1 and 6 show this) and smaller than the nominal outer radial dimension of the rotary component (e.g. this would be the case since the shaft having 12 is larger) for clamping engagement of the mounting ring with the rotary component, a seal housing (e.g. 15) divided in at least one radial plane into sections in the

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form of segments of a circle adapted to be clamped together and mutually sealed against each other, wherein the second seal ring (e.g. ring portion that contacts 17) is adapted to be fastened to the housing for cooperating with the first seal ring of the driver device. The peripherally aligned end faces of the retaining ring are in essentially planar metal to metal contact (e.g. figure 5 at 62) and comprise a surface finish for mutually sealing them (when metal is split the split surface has a surface finish). The retaining ring and the mounting ring are coupled together with play in at least the circumferential direction (figures 4-6). The seal ring is loosely seated on the retaining ring (figure 1 and 4). The seal housing include peripherally aligned end faces, which are configured to be in essentially planar metal to metal contact (e.g. figure 1 at 48) and the end faces having a surface finish for sealing engagement to one another. The retaining ring and the mounting ring are coupled together with play (this is the case since a resilient member 26 is placed between 20 and 22 which provides play between 20 and 22). The driver device has pins and groove or recess that receives pins (see figures). Furthermore the retaining ring and the mounting ring are coupled together with play since they are segmented, the diameter of the rings are larger than outer diameter of a potential shaft and elastomer members placed between the potential shaft and the rings (e.g. 27 and 26). Furthermore each and every structural limitation of the claims is taught by Kinoshita. The mechanical face seal of Kinoshita is capable of being used in a relatively rotating environment.

Kinoshita discloses the invention substantially as claimed above but fails to disclose that one of the retaining ring and the mounting ring having a pin and the other of the retaining ring and the mounting ring having a recess to receive the pin. Copes discloses a mounting ring and a retaining ring (e.g. 26 and 23), one of the mounting ring and the retaining ring having a pin (e.g.

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28) and the other of the mounting ring and the retaining ring having a recess (e.g. recess that receives the pin 28). It would have been obvious to one having ordinary skill in the art at the time of the invention to have the screw connection 24 of Kinoshita to be replaced by a pin and recess connection as taught by Copes, since the screw functions as to provide a connection between the rings to provide cooperatively rotation and the pin and recess also provides the same function (column 3, lines 15-30 of Copes). Furthermore to replace one structure that provide a rotation function by another structure that provides rotation function is considered to be art equivalent and obvious to one skilled in the art.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita.

Kinoshita and Copes discloses the claimed invention except that the end faces of the retaining ring have a roughness of 0.5 micrometer. Discovering an optimum range of a result effective variable involves only routine skill in the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the end face of Kinoshita to have roughness of 0.5 micro-meter to provide mechanical expedience and would be a matter of design choice.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi.

Takahashi and Copes discloses the claimed invention except that the end faces of the retaining ring have a roughness of 0.5 micrometer. Discovering an optimum range of a result effective variable involves only routine skill in the art. In re Kulling, 895 F.2d 1147, 14 USPQ 2d 1056. Without the showing of some unexpected result. Since applicant has not shown some

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unexpected result the inclusion of this limitation is considered to be a matter of choice in design. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the end face of Takahashi to have roughness of 0.5 micro-meter to provide mechanical expedience and would be a matter of design choice.

Response to Arguments

7. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is 571-272-7060. The examiner can normally be reached on 6:30am to 8:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. P./

Primary Examiner, Art Unit 3676

/Vishal Patel/

Primary Examiner, Art Unit 3676